

Practitioner's Docket No. MPI00-133M**IN THE CLAIMS:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

STATUS OF THE CLAIMS:

1-52 CANCELLED

53. (presently amended) An isolated nucleic acid selected from the group consisting of:

- a. a nucleic acid comprising the nucleotide sequence of SEQ ID NO:1 or nucleotides 7-4545 of SEQ ID NO:1 ~~SEQ ID NO:3~~;
- b. a nucleic acid comprising the nucleotide sequence of the cDNA insert of the plasmid deposited with the ATCC as Accession Number PTA-1836 or a portion thereof, comprising the coding region;
- c. a nucleic acid which encodes a fragment of a polypeptide comprising the amino acid sequence of SEQ ID NO:2, wherein said fragment comprises at least 500 contiguous amino acids of SEQ ID NO:2 and has MEKK1 activity;
- d. ~~an~~ nucleic acid which has at least ~~about~~ 90% nucleotide sequence identity with the entire length of the nucleotide sequence of SEQ ID NO:1 or entire length of the nucleotides 7-4545 of SEQ ID NO:1 ~~SEQ ID NO:3~~, and wherein said nucleic acid encodes for a protein having MEKK1 activity;
- e. a nucleic acid which has at least ~~about~~ 90% nucleotide sequence identity with the entire length of the nucleotide sequence of SEQ ID NO:1, wherein said nucleic acid comprises nucleotide residues 1 to 64 of SEQ ID NO:1 and wherein said nucleic acid encodes for a protein having MEKK1 activity;
- f. a nucleic acid which has at least ~~about~~ 90% nucleotide sequence identity with the entire length of the nucleotide sequence of the insert of the plasmid deposited with the ATCC as Accession Number PTA-1836, wherein said nucleic acid comprises nucleotide residues 1 to 64 of SEQ ID NO:1 and wherein said nucleic acid encodes for a protein having MEKK1 activity;
- g. a nucleic acid comprising the nucleotide sequence which encodes a polypeptide comprising the amino acid sequence of SEQ ID NO:2 or the amino acid sequence encoded by the cDNA insert of the plasmid deposited with ATCC as Accession Number PTA-1836;
- h. a nucleic acid encoding a MEKK1 allelic variant, wherein said MEKK1 allelic variant comprises ~~a sequence~~, an amino acid sequence, having at least ~~about~~ 90% amino acid sequence identity with the entire length of SEQ ID NO:2, wherein said nucleic acid

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- encodes for amino acid residues 1 to 20 of SEQ ID NO:2, and wherein said allelic variant has MEKK1 activity; and
- i. a nucleic acid encoding a MEKK1 allelic variant, wherein said MEKK1 variant comprises ~~a sequence~~, an amino acid sequence having at least ~~about~~ 97% amino acid sequence identity with the entire length of SEQ ID NO:2 and wherein said allelic variant has MEKK1 activity.
54. (Presently amended) The isolated nucleic acid of claim 53, wherein said nucleic acid further comprises a detectable label.
55. (Previously presented) The isolated nucleic acid of claim 54, wherein said detectable label is selected from the group consisting of a chemiluminescent, fluorescent, radioactive, and colorimetric label.
56. (Presently amended) An isolated vector selected from the group consisting of:
- a vector comprising a recombinant nucleic acid comprising the nucleotide sequence of SEQ ID NO: 1, or nucleotides 7-4545 of SEQ ID NO:1 ~~SEQ ID NO:3~~;
 - a vector comprising a recombinant nucleic acid comprising the nucleotide sequence of the cDNA insert of the plasmid deposited with the ATCC as Accession Number PTA-1836 or a portion thereof comprising the coding region;
 - a vector comprising a recombinant nucleic acid which encodes a fragment of a polypeptide comprising the amino acid sequence of SEQ ID NO:2, wherein said fragment comprises at least 500 contiguous amino acids of SEQ ID NO:2 and has MEKK1 activity;
 - a vector comprising a recombinant nucleic acid which has at least ~~about~~ 90% nucleotide sequence identity with the entire length of the nucleotide sequence of SEQ ID NO:1 or entire length of the nucleotides 7-4545 of SEQ ID NO:1 ~~SEQ ID NO:3~~, and wherein said nucleic acid encodes for a protein having MEKK1 activity;
 - a vector comprising a recombinant nucleic acid which has at least ~~about~~ 90% nucleotide sequence identity with the entire length of the nucleotide sequence of SEQ ID NO:1, wherein said nucleic acid comprises nucleotide residues 1 to 64 of SEQ ID NO:1 and wherein said nucleic acid encodes for a protein having MEKK1 activity;
 - a vector comprising a recombinant nucleic acid which has at least ~~about~~ 90% nucleotide sequence identity with the entire length of the nucleotide sequence of the insert of the plasmid deposited with the ATCC as Accession Number PTA-1836, wherein said nucleic acid comprises nucleotide residues 1 to 64 of SEQ ID NO:1 and wherein said nucleic acid encodes for a protein having MEKK1 activity;

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- g. a vector comprising a recombinant nucleic acid comprising the nucleotide sequence which encodes a polypeptide comprising the amino acid sequence of SEQ ID NO:2 or the amino acid sequence encoded by the cDNA insert of the plasmid deposited with ATCC as Accession Number PTA-1836;
 - h. a vector comprising a recombinant nucleic acid encoding MEKK1 allelic variant, wherein said MEKK1 allelic variant comprises a sequence, an amino acid sequence, having at least ~~about~~ 90% amino acid sequence identity with the entire length of SEQ ID NO:2, wherein said nucleic acid encodes for amino acid residues 1 to 20 of SEQ ID NO:2, and wherein said allelic variant has MEKK1 activity; and
 - i. a vector comprising a recombinant nucleic acid encoding a MEKK1 allelic variant, wherein said MEKK1 variant comprises a sequence, an amino acid sequence having at least ~~about~~ 97% amino acid sequence identity with entire length of SEQ ID NO:2 and wherein said allelic variant has MEKK1 activity.
57. (Presently amended) A host cell selected from the group consisting of:
- a. a host cell comprising a recombinant nucleic acid comprising the nucleotide sequence of SEQ ID NO:1, or nucleotides 7-4545 of SEQ ID NO:1 ~~SEQ ID NO:3~~;
 - b. a host cell comprising a recombinant nucleic acid comprising the nucleotide sequence of the cDNA insert of the plasmid deposited with the ATCC as Accession Number PTA-1836 or a portion thereof comprising the coding region;
 - c. a host cell comprising a recombinant nucleic acid which encodes a fragment of a polypeptide comprising the amino acid sequence of SEQ ID NO:2, wherein said fragment comprises at least 500 contiguous amino acids of SEQ ID NO:2 and has MEKK1 activity;
 - d. a host cell comprising a recombinant nucleic acid which has at least ~~about~~ 90% nucleotide sequence identity with the entire length of the nucleotide sequence of SEQ ID NO:1 or nucleotides 7-4545 of SEQ ID NO:1 ~~SEQ ID NO:3~~, and wherein said nucleic acid encodes for a protein having MEKK1 activity;
 - e. a host cell comprising a recombinant nucleic acid which has at least ~~about~~ 90% nucleotide sequence identity with the entire length of the nucleotide sequence of SEQ ID NO:1, wherein said nucleic acid comprises nucleotide residues 1 to 64 of SEQ ID NO:1 and wherein said nucleic acid encodes for a protein having MEKK1 activity;
 - f. a host cell comprising a recombinant nucleic acid which has at least ~~about~~ 90% nucleotide sequence identity with the entire length of the nucleotide sequence of the insert of the plasmid deposited with the ATCC as Accession Number PTA-1836, wherein

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said nucleic acid comprises nucleotide residues 1 to 64 of SEQ ID NO:1 and wherein said nucleic acid encodes for a protein having MEKK1 activity;

- g. a host cell comprising a recombinant nucleic acid comprising the nucleotide sequence which encodes a polypeptide comprising the amino acid sequence of SEQ ID NO:2 or the amino acid sequence encoded by the cDNA insert of the plasmid deposited with ATCC as Accession Number PTA-1836;
- h. a host cell comprising a recombinant nucleic acid encoding a MEKK1 allelic variant, wherein said MEKK1 allelic variant comprises a sequence, an amino acid sequence, having at least about 90% amino acid sequence identity with entire length of SEQ ID NO:2, wherein said nucleic acid encodes amino acid residues 1 to 20 of SEQ ID NO:2, and wherein said allelic variant has MEKK1 activity; and
- i. a host cell comprising a recombinant nucleic acid encoding a MEKK1 allelic variant, wherein said MEKK1 variant comprises a sequence, an amino acid sequence having at least about 97% amino acid sequence identity with entire length of SEQ ID NO:2 and wherein said allelic variant has MEKK1 activity;

wherein said recombinant nucleic acid is operatively linked to an expression control element.

- 58. (Previously presented) The host cell of claim 57, wherein said host cell is a prokaryotic cell or a eukaryotic cell.
- 59. (Previously presented) The host cell of claim 58, wherein said eukaryotic cell is a mammalian cell.
- 60. (Presently amended) A method for producing a MEKK1 polypeptide ~~selected from the group consisting of~~ comprising a method selected from:
 - a. maintaining a host cell under condition suitable for expression, wherein said host cell comprises a recombinant nucleic acid comprising SEQ ID NO:1 or nucleotides 7-4545 of SEQ ID NO:1 ~~SEQ ID NO:3~~; and
 - b. maintaining a host cell, under condition suitable for expression, wherein said host cell comprises a recombinant nucleic acid comprising a fragment of SEQ ID NO:1, wherein said fragment encodes an amino acid comprising at least 500 contiguous amino acids of SEQ ID NO:2 and has MEKK1 activity.
- 61. (New) The isolated nucleic acid molecule of claim 53, which is selected from the group consisting of:
 - a. A nucleic acid molecule which encodes a polypeptide comprising the amino acid sequence of SEQ ID NO:2, or the amino acid sequence encoded by the cDNA insert of the plasmid deposited with the ATCC as Accession Number PTA-1835; and

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- b. A nucleic acid comprising the nucleotide sequence of SEQ ID NO:1 or the cDNA insert of the plasmid deposited with the ATCC as Accession Number PTA-1836.
62. (New) A vector comprising the nucleic acid molecule of claim 61.
63. (New) A host cell that contains the vector of claim 62.
64. (New) The host cell of claim 63, wherein the host cell is a mammalian host cell.
65. (New) The nucleic acid molecule of claim 54 further comprising a nucleic acid sequence encoding a heterologous polypeptide.
66. (New) A vector comprising the nucleic acid molecule of claim 65.
67. (New) A host cell that contains the vector of claim 66.
68. (New) The host cell of claim 67, wherein the host cell is a mammalian host cell.
69. (New) The nucleic acid molecule of claim 61 further comprising a nucleic acid sequence encoding a heterologous polypeptide.
70. (New) A vector comprising the nucleic acid molecule of claim 69.
71. (New) A host cell that contains the vector of claim 70.
72. (New) The host cell of claim 41, wherein the host cell is a mammalian host cell.